

What is claimed:

1. A photomask protected against electrostatic damage comprising:

5 a substrate having a front face and a back face, said substrate being transparent at least to light having a selected wavelength used for printing;

a pattern permanently applied over said front face of said substrate, said pattern being opaque to said  
10 light having said selected wavelength used for printing; and

a conductive film which is transparent to said light having said selected wavelength used for printing, said conductive film deposited so as to at least cover those  
15 portions of said front face of said substrate not covered by said opaque pattern.

2. The photomask of Claim 1 wherein said conductive film further covers said opaque pattern.

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3. The photomask of Claim 2 wherein said conductive film further covers said back face of said substrate, thereby forming a Faraday cage around said photomask.

25 4. The photomask of Claim 1 wherein said conductive film covers substantially all of said front face of said

substrate and said opaque pattern is permanently secured to said conductive film covering said front face of said substrate.

5 5. The photomask of Claim 4 wherein said conductive film further covers said back face of said substrate thereby forming a Faraday cage around said photomask.

6. The photomask of Claim 1 wherein said substrate is  
10 fused silica.

7. The photomask of Claim 2 wherein said substrate is fused silica.

15 8. The photomask of Claim 4 wherein said substrate is fused silica.

9. The photomask of Claim 1 wherein said opaque pattern is made of a material selected from the group consisting  
20 of Chromium and Molybdenum silicide.

10. The photomask of Claim 2 wherein said opaque pattern is made of a material selected from the group consisting of Chromium and Molybdenum silicide.

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11. The photomask of Claim 4 wherein said opaque pattern is made of a material selected from the group consisting of Chromium and Molybdenum silicide.

5 12. The photomask of Claim 6 wherein said opaque pattern is made of a material selected from the group consisting of Chromium and Molybdenum silicide.

10 13. The photomask of Claim 1 wherein said conductive film is made from a material selected from the group consisting of ITO (Indium Tin Oxide), Palladium, Platinum, Gold and conductive polymers.

15 14. The photomask of Claim 2 wherein said conductive film is made from a material selected from the group consisting of ITO (Indium Tin Oxide), Palladium, Platinum, Gold and conductive polymers.

20 15. The photomask of Claim 4 wherein said conductive film is made from a material selected from the group consisting of ITO (Indium Tin Oxide), Palladium, Platinum, Gold and conductive polymers.

25 16. The photomask of Claim 6 wherein said conductive film is made from a material selected from the group

consisting of ITO (Indium Tin Oxide), Palladium,  
Platinum, Gold and conductive polymers.

17. The photomask of Claim 9 wherein said conductive  
5 film is made from a material selected from the group  
consisting of ITO (Indium Tin Oxide), Palladium,  
Platinum, Gold and conductive polymers.

18. The photomask of Claim 10 wherein said conductive  
10 film is made from a material selected from the group  
consisting of ITO (Indium Tin Oxide), Palladium,  
Platinum, Gold and conductive polymers.

19. The photomask of Claim 11 wherein said conductive  
15 film is made from a material selected from the group  
consisting of ITO (Indium Tin Oxide), Palladium,  
Platinum, Gold and conductive polymers.

20. The photomask of Claim 12 wherein said conductive  
20 film is made from a material selected from the group  
consisting of ITO (Indium Tin Oxide), Palladium,  
Platinum, Gold and conductive polymers.

21. The photomask of Claim 1 wherein said light used for  
25 printing has a wavelength of 436 nm (nanometer) and said

conductive film is ITO deposited to a thickness of about 100 Angstroms.

22. The photomask of Claim 2 wherein said light used for  
5 printing has a wavelength of 436 nm (nanometer) and said  
conductive film is ITO deposited to a thickness of about  
100 Angstroms.

23. The photomask of Claim 4 wherein said light used for  
10 printing has a wavelength of 436 nm (nanometer) and said  
conductive film is ITO deposited to a thickness of about  
100 Angstroms.

24. The photomask of Claim 6 wherein said light used for  
15 printing has a wavelength of 436 nm (nanometer) and said  
conductive film is ITO deposited to a thickness of about  
100 Angstroms.

25. The photomask of Claim 12 wherein said light used  
20 for printing has a wavelength of 436 nm (nanometer) and  
said conductive film is ITO deposited to a thickness of  
about 100 Angstroms.

26. The photomask of Claim 1 wherein said light used for  
25 printing has a wavelength of about 248 nm (nanometer) and

said conductive film is Palladium deposited to a thickness of about 30 Angstroms.

27. The photomask of Claim 2 wherein said light used for  
5 printing has a wavelength of about 248 nm (nanometer) and said conductive film is Palladium deposited to a thickness of about 30 Angstroms.

28. The photomask of Claim 4 wherein said light used for  
10 printing has a wavelength of about 248 nm (nanometer) and said conductive film is Palladium deposited to a thickness of about 30 Angstroms.

29. The photomask of Claim 6 wherein said light used for  
15 printing has a wavelength of about 248 nm (nanometer) and said conductive film is Palladium deposited to a thickness of about 30 Angstroms.

30. The photomask of Claim 12 wherein said light used  
20 for printing has a wavelength of about 248 nm (nanometer) and said conductive film is Palladium deposited to a thickness of about 30 Angstroms.

31. The photomask of Claim 1 wherein said light used for  
25 printed has a wavelength of about 193 nm (nanometer) and said conductive film is a material selected from the

group consisting of Palladium, Platinum, Gold and  
conductive polymers deposited to a thickness of between  
about 30 Angstroms and 100 Angstroms.

5 32. The photomask of Claim 2 wherein said light used for  
printed has a wavelength of about 193 nm (nanometer) and  
said conductive film is a material selected from the  
group consisting of Palladium, Platinum, Gold and  
conductive polymers deposited to a thickness of between  
10 about 30 Angstroms and 100 Angstroms.

33. The photomask of Claim 4 wherein said light used for  
printed has a wavelength of about 193 nm (nanometer) and  
said conductive film is a material selected from the  
15 group consisting of Palladium, Platinum, Gold and  
conductive polymer deposited to a thickness of between  
about 30 Angstroms and 100 Angstroms.

34. The photomask of Claim 6 wherein said light used for  
20 printed has a wavelength of about 193 nm (nanometer) and  
said conductive film is a material selected from the  
group consisting of Palladium, Platinum, Gold and  
conductive polymers deposited to a thickness of between  
about 30 Angstroms and 100 Angstroms.

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35. The photomask of Claim 12 wherein said light used  
for printed has a wavelength of about 193 nm (nanometer)  
and said conductive film is a material selected from the  
group consisting of Palladium, Platinum, Gold and  
5 conductive polymers deposited to a thickness of between  
about 30 Angstroms and 100 Angstroms.

36. A method of manufacturing a photomask protected  
against electrical damage, comprising:

10 providing a substrate having a front face and a back  
face, said substrate being transparent to a selected  
light wavelength used for printing;

permanently applying a pattern over said front face  
which is opaque to said light having a selected  
15 wavelength used for printing;

depositing a conductive film so as to cover at least  
those portions of said front face of said substrate not  
covered by said opaque pattern, said conductive film  
being transparent to said light having a selected  
20 wavelength used for printing.

37. The method of Claim 36 wherein said depositing step  
comprises depositing said conductive film to cover said  
front face of said substrate including said pattern.

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38. The method of Claim 36 wherein said depositing step occurs prior to said step of applying said pattern and at least covers substantially all of said front face of said substrate.

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39. The method of Claim 36 wherein said substrate is fused silica.

40. The method of Claim 37 wherein said substrate is fused silica.

41. The method of Claim 38 wherein said substrate is fused silica.

42. The method of Claim 36 wherein said opaque pattern is made from a material selected from the group consisting of Chromium and Molybdenum Silicide.

43. The method of Claim 37 wherein said opaque pattern is made from a material selected from the group consisting of Chromium and Molybdenum Silicide.

44. The method of Claim 38 wherein said opaque pattern is made from a material selected from the group consisting of Chromium and Molybdenum Silicide.

45. The method of Claim 39 wherein said opaque pattern is made from a material selected from the group consisting of Chromium and Molybdenum Silicide.

5 46. The method of Claim 40 wherein said opaque pattern is made from a material selected from the group consisting of Chromium and Molybdenum Silicide.

10 47. The method of Claim 41 wherein said opaque pattern is made from a material selected from the group consisting of Chromium and Molybdenum Silicide.

15 48. The method of Claim 38 wherein said conductive film is made from a material selected from the group consisting of ITO (Indium Tin Oxide), Palladium, Platinum, Gold and conductive polymers.

20 49. The method of Claim 37 wherein said conductive film is made from a material selected from the group consisting of ITO (Indium Tin Oxide), Palladium, Platinum, Gold and conductive polymers.

25 50. The method of Claim 38 wherein said conductive film is made from a material selected from the group consisting of ITO (Indium Tin Oxide), Palladium, Platinum, Gold and conductive polymers.

51. The method of Claim 39 wherein said conductive film is made from a material selected from the group consisting of ITO (Indium Tin Oxide), Palladium,  
5 Platinum, Gold and conductive polymers.

52. The method of Claim 48 wherein said conductive film is ITO deposited to a thickness of about 100 Angstroms.

10 53. The method of Claim 49 wherein said conductive film is ITO deposited to a thickness of about 100 Angstroms.

54. The method of Claim 50 wherein said conductive film is ITO deposited to a thickness of about 100 Angstroms.

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55. The method of Claim 48 wherein said conductive film is made from a material selected from the group consisting of Palladium, Platinum, Gold and conductive polymer and is deposited to a thickness between about 30  
20 Angstroms and 100 Angstroms.

56. The method of Claim 49 wherein said conductive film is made from a material selected from the group consisting of Palladium, Platinum, Gold and conductive  
25 polymer and is deposited to a thickness between about 30 Angstroms and 100 Angstroms.

57. The method of Claim 50 wherein said conductive film  
is made from a material selected from the group  
consisting of Palladium, Platinum, Gold and conductive  
5 polymer and is deposited to a thickness between about 30  
Angstroms and 100 Angstroms.

58. The method of Claim 51 wherein said conductive film  
is made from a material selected from the group  
10 consisting of Palladium, Platinum, Gold and conductive  
polymer and is deposited to a thickness between about 30  
Angstroms and 100 Angstroms.

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